

REMARKS/ARGUMENTS

Reconsideration of the application as amended is respectfully requested.

Status of Claims

Claims 1 and 3-19 are pending in the application, with claims 1 and 16-19 being the only independent claims. Claims 1 and 3-15 have been amended. Claims 16-19 have been added. Claim 2 has been canceled because its allowable subject matter has been incorporated into claim 1.

Overview of the Office Action

Claims 7, 8 and 12 stand objected to because of informalities listed on page 2 of the Office Action.

Claims 1 and 3-15 stand rejected under 35 U.S.C. §112, second paragraph, because of informalities in claims 1, 3, 5, 10 and 13 listed on pages 2-4 of the Office Action.

Claims 2-4 were indicated as being allowable if suitably rewritten in independent form to include all of the limitations of the base claim and any intervening claims, and to overcome the rejections under §112, second paragraph.

Claim 1 stands rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 2,547,120 (*Herwig*).

Claims 5-11 and 14-15 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Herwig*.

Claims 12 and 13 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Herwig* in view of DE 35 39 318 (*DE '318*).

Amendments Addressing Section 112 Issues and Informalities

Claims 1, 3, 5, 7, 8, 10 and 13 have been amended to eliminate the informalities listed on pages 2-4 of the Office Action.

In view of these self-explanatory amendments, withdrawal of the objection to claims 7, 8 and 12 and the rejection of claims 1 and 3-15 under §112, second paragraph, is respectfully requested.

Summary of Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The present application discloses a method of applying a metal coating to graphite. An embodiment of the method includes the steps of anodic etching the graphite in an alkaline etchant, Pd seeding the graphite, and electroplating the graphite with the metal. See paragraphs [0007], [0008] and [0012] of the specification.

The alkaline etchant preferably is a solution of at least one of NaOH and KOH having a concentration in the range of 10 to 70% by weight. See paragraph [0016] of the specification. The duration of the anodic etching is preferably in the range of 5 to 90 minutes. See paragraph [0015] of the specification.

Descriptive Summary of the Prior Art

Herwig

Herwig discloses a method of plating a carbon or graphite part with chromium to increase the surface hardness. The method includes soaking the carbon or graphite part in a mild alkaline cleaner containing three ounces of NaOH and two ounces of Na₂CO₃ per gallon of water (having a concentration of approximately 2% NaOH by weight). After this step, the carbon or graphite part is subjected to a short anodic etching in the mild alkaline cleaner for about 0.08 to 0.25 minutes. See col. 1, lines 1-4, 19-22 and 46-54; col. 2, lines 1-7; claim 1 of *Herwig*.

Furthermore, *Herwig* acknowledges that electroplating carbon or graphite has been problematic. See col. 1, lines 23-32 of *Herwig*.

DE '318

DE '318 relates to fixed-value resistors comprising a film made of plastic admixed with electrically conductive particles such as soot, graphite and/or metal. See Abstract of *DE '318*. The resistors have terminals that are made of solderable material and covered by silver coating. See Abstract; col. 3, lines 34-37 of *DE '318*.

Arguments

Independent Claim 1

Claim 1 has been amended to include the subject matter recited in claim 2 which was indicated by the Examiner as being allowable. As such, claim 1 now corresponds to allowable claim 2 and is therefore allowable.

Dependent Claims 3-15

Claims 3-15 depend, either directly or indirectly, from claim 1 and, thus, each is allowable therewith. In addition, these claims include features which serve to even more clearly distinguish the present invention over the prior art of record.

Independent Claims 16 and 19

Claim 16 corresponds to original claim 10, written in independent form. Similarly, claim 19 corresponds to original claim 15, written in independent form. Applicant respectfully submits that the Examiner has not made a *prima facie* case of obviousness of claims 16 and 19 over *Herwig*.

The Examiner cites MPEP §2144.05 when rejecting the original claims 10 and 15 under §103. According to MPEP §2144.05, however, a *prima facie* case of obviousness exists when (1) the claimed range overlaps or lies inside the prior art range, or (2) when the claimed range is close enough to the prior art range that one skilled in the pertinent art would have expected them to have the same properties. See MPEP §2144.05(I).

Here, neither (1) nor (2) is satisfied. More specifically, with respect to claim 16, the claimed range is at least one of NaOH and KOH having a concentration in the range of 10 to 70% by weight. In contrast, the range disclosed in *Herwig* is about 2% NaOH by weight. Thus, the claimed range does not overlap or lie inside the prior art range. Furthermore, the claimed range is not close enough to the prior art range as the lower limit of the claimed range is about 5 times higher than the prior art range. Thus, in view of this substantial gap between the claimed range and prior art range, a person skilled in the pertinent art would not expect them to have the same properties.

Similarly, with respect to claim 19, the claimed range (5 to 90 minutes) does not overlap or lie within the prior art range (0.08 to 0.25 minutes). Nor is the claimed range close enough to the prior art range (the lower limit of the claimed ranges is 20 times higher than the upper limit of the prior art range). In view of this substantial gap between the claimed range and prior art range, a person skilled in the pertinent art would not expect them to have the same properties.

Furthermore, *Herwig* does not teach or suggest the features recited in claim 19 of an applied electrical potential having a range of 4V to 20V or the actual anodic etching duration having an inversely proportional relationship with the applied electrical potential.

In view of the foregoing, Applicant respectfully submits that independent claims 16 and 19 are patentable over *Herwig*.

Independent Claims 17 and 18

Claim 17 corresponds to original claim 12, written in independent form. Similarly, claim 18 corresponds to original claim 13, written in independent form. Applicant respectfully submits that claims 17 and 18 are patentable because there is no suggestion or motivation to modify or combine *Herwig* with *DE '318* in the way proposed in the Office Action.

As discussed earlier, *Herwig* relates to a method of plating a carbon or graphite part with chromium in order to increase the surface hardness. *DE '318*, on the other hand, relates to fixed-value resistors comprising a film made of plastic admixed with electrically conductive particles such as soot, graphite and/or metal. The resistors of *Herwig* have terminals that are made of solderable material and covered by silver coating. Unlike *Herwig*, *DE '318* does not address the issues of surface hardness and electroplating the resistors.

Turning to claim 17, since *DE '318* does not address the issues that *Herwig* addresses and since *Herwig* explicitly acknowledges that electroplating graphite has been problematic, a person skilled in the pertinent art would not modify the method of *Herwig* with *DE '318* by using graphite particles bound by plastics because the reduced electrical conductivity caused by the plastics would make the electroplating process even more difficult or problematic.

With respect to claim 18, *DE '318* explicitly teaches applying a silver coating to the solderable terminals before applying the terminals to the resistors. Thus, in order to produce a

method as recited in claim 18, one has to modify the teaching of *DE '318* by omitting the silver coating step before combining *DE '318* with *Herwig*. But since *DE '318* does not address the issues that *Herwig* addresses, there is no suggestion or motivation to make such a modification and combination.

The fact that something can be done is an insufficient basis to obviate an invention. Absent a motivation, the references can be modified and/or combined in the way proposed in the Office Action only with impermissible hindsight based on the present invention.

In view of the foregoing, Applicant respectfully submits that claims 17 and 18 are patentable over the prior art of record.

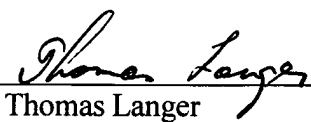
Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,

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